

Claims:

1. A protein or its molecular variant that can induce an allergic reaction in persons sensitized to the protein.
- 5 2. A protein or its molecular variant as claimed in claim 1 characterized in that the DNA sequence encoding the protein or a portion of the protein is as follows:

5	DNA: acgcgggggcggttaacacttggtttttgcttccacttcatggagttccctg	51
	----1----1----1----1----1----1----1----1----1----1--	
	DNA: aaaccaataacaaccctatcatcactctctctttcttattatgcatgcttt	102
	---1----1----1----1----1----1----1----1----1----1--	
	DNA: ccctagcttatgcttccgaaacctgtgattttccagcaatctttaacttcg	153
10	--1----1----1----1----1----1----1----1----1----1---	
	DNA: gcgactccaattccgataccggtggcaaggcagctgccttttatcctctta	204
	-1----1----1----1----1----1----1----1----1----1----	
	DNA: accctccttatggagagactttctttcacaggctcgacaggaaggctactctg	255
	1----1----1----1----1----1----1----1----1----1----	
15	DNA: atggaaggctcataatagattttatcgccgagagtttcaatctcccatatc	306
	----1----1----1----1----1----1----1----1----1----1-	
	DNA: tgagtccatatcttagttccctgggaagcaacttcaaacatgggtgcagatt	357
	---1----1----1----1----1----1----1----1----1----1--	
20	DNA: ttgccacagcaggatccaccattaaactaccaactactattatacctgctc	408
	--1----1----1----1----1----1----1----1----1----1---	
	DNA: atggtggatttagtccattctaccttgatgtccaatattcgcaattccggc	459
	-1----1----1----1----1----1----1----1----1----1----	
	DNA: aattcatacccagatcacagtttatcagggaaactggaggcatatttgctg	510
	1----1----1----1----1----1----1----1----1----1----	
25	DNA: aattggtgcccgaggaatattattttgagaaagctttatacacattcgata	561
	----1----1----1----1----1----1----1----1----1----1-	
	DNA: ttggtcaaaatgatcttacagaaggattcttgaacttaactgtggaagaag	612
	---1----1----1----1----1----1----1----1----1----1--	
30	DNA: tgaatgcaactgtccctgatcttgtgaatagctttctcagcaaacgttaaga	663
	--1----1----1----1----1----1----1----1----1----1---	

DNA: aaatatacgatttgggagctagaacattttggattcacaacacaggaccaa 714
 -1----1----1----1----1----1----1----1----1----1----1----
 DNA: ttggttgtctttcattcattttaacgtattttccctgggcagaaaaggata 765
 1----1----1----1----1----1----1----1----1----1----1----
 5 DNA: gtgcaggctgtgcaaaaagcttacaatgaagttgctcagcattttaatcaca 816
 ----1----1----1----1----1----1----1----1----1----1----
 DNA: agttgaaggagatcgttgctcaactcaggaaggatttgccttttagctacat 867
 ---1----1----1----1----1----1----1----1----1----1----
 10 DNA: tcgtccacgttgacatctattctgtcaagtattctttattcagtgagccag 918
 --1----1----1----1----1----1----1----1----1----1----
 DNA: aaaaacacggtttcgagtttccacttataacatgttgtggctacggaggaa 969
 -1----1----1----1----1----1----1----1----1----1----
 DNA: agtacaatttttagtgttactgctccatgtggagatacagttacagcagacg 1020
 1----1----1----1----1----1----1----1----1----1----1----
 15 DNA: acggtacaaaaatagttgtgggttcatgtgcttgcccttcagttcgagtaa 1071
 ----1----1----1----1----1----1----1----1----1----1----
 DNA: attgggatggagctcactacactgaagctgccaatgaatatttttctgacc 1122
 ---1----1----1----1----1----1----1----1----1----1----
 20 DNA: agatttctacaggagccttctctgatccccctgttccattgaatatggcat 1173
 --1----1----1----1----1----1----1----1----1----1----
 DNA: gtcataaaaactgaatcattgaggacattagcctctgtataggttatatgaa 1224
 -1----1----1----1----1----1----1----1----1----1----
 DNA: agtgctttgctgaaagcccgctaataaaaatgaggaataataataaatgaga 1275
 1----1----1----1----1----1----1----1----1----1----1----
 25 DNA: aaccattgattatgttaggattcacttggtttctatcataataatctatct 1326
 ----1----1----1----1----1----1----1----1----1----1----
 DNA: gttgtatatacaacagttgtatgaaatagtttcttgtaataaagacttgtc 1377
 ---1----1----1----1----1----1----1----1----1----1----
 DNA: tttctccggtttcccta 1394

- 30 3. A protein or its molecular variant as claimed in claim 1 or 2 characterized in that the protein or its molecular variant has the following properties:
- 35 a. has a molecular weight of about 42,000 Dalton;
- b. has an isoelectric point of about 4.7;

- c. binds with IgE of patients sensitized to the protein; and
- d. contains the amino acid sequence or portions thereof or minor variations of these amino acid sequence as shown below:

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AGALTLGFCFHFMEFPETNNNPIITLSFLLCMLSLAYASETCDFPAIFNF
----1----1----1----1----1----1----1----1----1----1 50

GDSNSDTGGKAAAFYPLNPPYGETFFHRSTGRYSDGRLIIDFIAESFNLP
----1----1----1----1----1----1----1----1----1----1 100

YLSPYLSSLGSNFKHGADFATAGSTIKLPTTIIPAHGGFSPFYLDVQYSQ
----1----1----1----1----1----1----1----1----1----1 150

FRQFIPRSQFIRETGGIFAELVPEEYFEKALYTFDIGQNDLTEGFLNLT
----1----1----1----1----1----1----1----1----1----1 200

VEEVNATVPDLVNSFSANVKKIYDLGARTFWIHNTGPIGCLSFILTYFPW
----1----1----1----1----1----1----1----1----1----1 250

AEKDSAGCAKAYNEVAQHFNHKLKEIVAQLRKDLPLATFVHVDIYSVKYS
----1----1----1----1----1----1----1----1----1----1 300

LFSEPEKHGFEFPLITCCGYGGKYNFSVTAPCGDVTADDGTKIVVGSCA
----1----1----1----1----1----1----1----1----1----1 350

CPSVRVNWDGAHYTEAANEYFFDQISTGAFSDPPVPLNMACHKTESLRTL
----1----1----1----1----1----1----1----1----1----1 400

ASV*VI*KCFAESPLIK*GIIINEKPLIMLGFTWFLS**SICCIYNSCMK
----1----1----1----1----1----1----1----1----1----1 450

*FLVIKTCLSPVSL
----1----1----1 464

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4. A process for obtaining a protein or its molecular variant according to any one of Claims 1 - 3 wherein the process comprises the following steps:

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- a) centrifuging the latex for obtaining the bottom fraction;
- b) freeze-thawing the bottom fraction for obtaining the latex B-serum; and

c) isolating and purifying the protein from the B-serum obtained in step (b).

5. A process for obtaining a protein or its molecular variant as claimed in Claim 4 wherein the isolation and purification of the protein are carried out via a series of chromatographic separations.

6. A process for obtaining a protein or its molecular variant as claimed in claim 5 wherein the chromatographic separation is ion exchange chromatography and gel filtration.

7. A peptide that is derived from the protein as claimed in any one of claims 1 - 3 or prepared according to the process as claimed in any one of claims 4 - 6 wherein the peptide has similar allergenic properties as the protein as claimed in claims 1 - 3.

8. A DNA sequence encoding the protein or a portion of the protein as claimed in claim 1 wherein the DNA sequence or minor variations of this sequence is as shown below:

DNA: acgcgggggcggttaacacttggtttttgcttccacttcatggagttccctg 51
----1----1----1----1----1----1----1----1----1----1--
DNA: aaaccaataacaaccctatcatcactctctctttcttattatgcatgcttt 102
---1----1----1----1----1----1----1----1----1----1--
DNA: ccctagcttatgcttccgaaacctgtgattttccagcaatctttaacttcg 153
--1----1----1----1----1----1----1----1----1----1---
DNA: ggcactccaattccgataccggtggcaaggcagctgccttttatcctctta 204
-1----1----1----1----1----1----1----1----1----1----

	DNA: accctccttatggagagactttctttcacaggctcgacaggaagggtactctg	255
	1----1----1----1----1----1----1----1----1----1----1	
	DNA: atggaaggctcataatagattttatcgccgagagtttcaatctcccatatc	306
	----1----1----1----1----1----1----1----1----1----1--	
5	DNA: tgagtccatatcttagttccctgggaagcaacttcaaacatggtgcagatt	357
	---1----1----1----1----1----1----1----1----1----1--	
	DNA: ttgccacagcaggatccaccattaaactaccaactactattatacctgctc	408
	--1----1----1----1----1----1----1----1----1----1----	
10	DNA: atggtggatttagtccattctaccttgatgtccaatattcgcaattccggc	459
	-1----1----1----1----1----1----1----1----1----1-----	
	DNA: aattcataccagatcacagtttatcagggaaactggaggcatatttgctg	510
	1----1----1----1----1----1----1----1----1----1-----	
	DNA: aattggtgcccagggaatattattttgagaaagctttatacacattcgata	561
	----1----1----1----1----1----1----1----1----1----1--	
15	DNA: ttggtcaaaatgatcttacagaaggattcttgaacttaactgtggaagaag	612
	---1----1----1----1----1----1----1----1----1----1--	
	DNA: tgaatgcaactgtccctgatcttgtgaatagcttctcagcaaacgttaaga	663
	--1----1----1----1----1----1----1----1----1----1----	
20	DNA: aaatatacgatttgggagctagaacatttttgattcacaacacaggaccaa	714
	-1----1----1----1----1----1----1----1----1----1-----	
	DNA: ttggttgtctttcattcattttaacgtattttccctgggcagaaaaggata	765
	1----1----1----1----1----1----1----1----1----1-----	
	DNA: gtgcaggctgtgcaaaagcttacaatgaagttgctcagcattttaatcaca	816
	----1----1----1----1----1----1----1----1----1----1--	
25	DNA: agttgaaggagatcgttgctcaactcaggaaggatttgctttagctacat	867
	---1----1----1----1----1----1----1----1----1----1--	
	DNA: tcgtccacgttgacatctattctgtcaagtattctttattcagtgagccag	918
	--1----1----1----1----1----1----1----1----1----1----	
30	DNA: aaaaacacggtttcgagtttccacttataacatgttgtggctacggaggaa	969
	-1----1----1----1----1----1----1----1----1----1-----	
	DNA: agtacaatttttagtgttactgctccatgtggagatacagttacagcagacg	1020
	1----1----1----1----1----1----1----1----1----1-----	
35	DNA: acggtaccaaaatagttgtgggttcatgtgcttgcccttcagttcgagtaa	1071
	----1----1----1----1----1----1----1----1----1----1--	
	DNA: attgggatggagctcactacactgaagctgccaatgaatattttttcgacc	1122
	---1----1----1----1----1----1----1----1----1----1--	
	DNA: agatttctacaggagccttctctgatccccctgttccattgaatatggcat	1173
	--1----1----1----1----1----1----1----1----1----1----	

	DNA: tgagtccatatcttagttccctgggaagcaacttcaaacatgggtgcagatt	357
	---1---1---1---1---1---1---1---1---1---1---	
	DNA: ttgccacagcaggatccaccattaaactaccaactactattatacctgctc	408
	--1---1---1---1---1---1---1---1---1---1---	
5	DNA: atgggtggatttagtccattctaccttgatgtccaatattcgcaattccggc	459
	-1---1---1---1---1---1---1---1---1---1---	
	DNA: aattcatacccagatcacagtttatcagggaaactggaggcatatttgctg	510
	1---1---1---1---1---1---1---1---1---1---	
10	DNA: aattggtgcccaggaatattattttgagaaagctttatacacattcgata	561
	----1---1---1---1---1---1---1---1---1---1-	
	DNA: ttggtcaaaatgatcttacagaaggattcttgaacttaactgtggaagaag	612
	---1---1---1---1---1---1---1---1---1---1---	
	DNA: tgaatgcaactgtccctgatcttgtgaatagcttctcagcaaacgttaaga	663
	--1---1---1---1---1---1---1---1---1---1---	
15	DNA: aaatatacgatttgggagctagaacattttggattcacaacacaggaccaa	714
	-1---1---1---1---1---1---1---1---1---1---	
	DNA: ttggttgtctttcattcatttttaacgtattttccctgggcagaaaaggata	765
	1---1---1---1---1---1---1---1---1---1---	
20	DNA: gtgcaggctgtgcaaaagcttacaatgaagttgctcagcatttttaatcaca	816
	----1---1---1---1---1---1---1---1---1---1-	
	DNA: agttgaaggagatcgttgctcaactcaggaaggatttgcctttagctacat	867
	---1---1---1---1---1---1---1---1---1---1---	
	DNA: tcgtccacgttgacatctattctgtcaagtattctttattcagtgagccag	918
	--1---1---1---1---1---1---1---1---1---1---	
25	DNA: aaaaacacggtttcgagtttccacttataacatgttgtggctacggaggaa	969
	-1---1---1---1---1---1---1---1---1---1---	
	DNA: agtacaatttttagtgttactgctccatgtggagatacagttacagcagacg	1020
	1---1---1---1---1---1---1---1---1---1---	
30	DNA: acggtacaaaaatagttgtgggttcatgtgcttgcccttcagttcgagtaa	1071
	----1---1---1---1---1---1---1---1---1---1-	
	DNA: attgggatggagctcactacactgaagctgccaatgaatatttttgcacc	1122
	---1---1---1---1---1---1---1---1---1---1---	
	DNA: agatttctacaggagccttctctgatccccctgttcattgaatatggcat	1173
	--1---1---1---1---1---1---1---1---1---1---	
35	DNA: gtcataaaaactgaatcattgaggacattagcctctgtatagggttatatgaa	1224
	-1---1---1---1---1---1---1---1---1---1---	
	DNA: agtgctttgctgaaagcccgctaataaaaatgaggaataataataaatgaga	1275
	1---1---1---1---1---1---1---1---1---1---	

DNA: aaccattgattatgtaggattcacttggtttctatcataataatctatct 1326
----1-----1-----1-----1-----1-----1-----1-----1-----1--

DNA: gttgtatatacaacagttgtatgaaatagtttcttgtaataaagacttgtc 1377
---1-----1-----1-----1-----1-----1-----1-----1-----1--

5 DNA: tttctccggtttcccta 1394
--1-----1-----1-----

11. A method for the production of a protein or its molecular variant in recombinant form as claimed in claim 9 or 10 wherein the vector is a micro-organism, a plant or an animal.
- 10 12. A method for the production of a protein or its molecular variant in recombinant form as claimed in claim 11 wherein the micro-organism is a bacterium, a virus or a yeast.
- 15 13. A method for the production of a protein or its molecular variant in recombinant form as claimed in claim 12 wherein the bacterium is *Escherichia coli*.
- 20 14. A method for the production of a protein or its molecular variant in recombinant form as claimed in claim 9 wherein the inducer is preferably isopropyl thiogalactoside (IPTG) or any other suitable inducer.
- 25 15. A recombinant protein or its molecular variant in recombinant form produced according to the methods as claimed in any one of claims 9 - 14.

16. The use of native protein or its molecular variant as claimed in any one of claims 1 - 7 in immunoassay and immunotherapy.
- 5 17. The use of recombinant protein or its molecular variant in recombinant form as claimed in any one of claims 8 -15 in immunoassay and immunotherapy.